

muscular work during 30 voluntary contractions from 26 to 33 per cent. While the total gain in a day's work may be 61 to 76 per cent., the time before fatigue sets in is also lengthened. The effect of sugar is so great that when added to a small meal it can increase the muscular power during 30 contractions from 9 to 21 per cent., and the approach of fatigue is at the same time retarded. When added to a large mixed meal sugar can increase the muscular power of 30 contractions 2 to 7 per cent. The increase in total work is 8 to 16 per cent., and a marked increase in the resistance to fatigue is shown. Two hundred and fifty grams of sugar taken in addition to a full diet increases the day's work. The work accomplished during 30 voluntary muscular contractions shows a gain of from 6 to 28 per cent., the total day's work giving an increase of power 9 to 36 per cent., and the time before fatigue sets in is lengthened. Moderate smoking, although it may have a slight influence in diminishing the power of doing voluntary muscular work, neither stops the morning rise, nor, when done early in the evening, hinders the evening fall. Sugar taken early in the evening is capable of obliterating the diurnal fall in muscular power that occurs at this time, and increases the resistance to fatigue. A. F.

A Study of the Reflexes in Thirty-four Epileptics.—Doctor Arthur Donaggio, of Reggio, publishes in the *Revista Sperimentale di Freniatria e di Medicina Legale*, Fas. i., 1894, the results of his examination of the reflexes, muscular force, and measurements of the extremities in thirty-four cases of epilepsy.

In the interval he found the patellar reflexes exaggerated in fifteen, medium in eight, diminished in seven and absent in two cases. There existed in the fifteen cases a difference of exaggeration, being stronger on the right side in ten, stronger on the left side in five cases. The tendo-Achilles reflex in twenty-seven cases was exaggerated in nine, medium in thirteen, diminished in three, and absent in two cases. The bicipital in thirty-one cases was exaggerated in eight, medium in twelve, diminished in nine, and absent in two cases. The olecranon reflex was exaggerated in six, medium in nine, diminished in nine, and absent in seven—of thirty-one cases examined. The abdominal reflex in thirty-two cases was exaggerated in three, medium in three, diminished in eleven, and absent in fifteen cases. The cremasteric reflex in twenty-five cases examined was exagger-

ated in two, medium in eight, diminished in seven, and absent in eight cases. Pupillary reflexes—examined in reference to pain reacted promptly in ten cases, medium in nine, slowly in four, and not at all in seven cases, of thirty examined. In regard to the light reaction, prompt in five, medium in thirteen, slowly in twelve cases. In reference to the inequality of the pupils, the author found in four cases only a slight inequality. W. C. K.

PATHOLOGICAL.

A Case of So-called Amyotrophic Lateral Sclerosis.—By Prof. H. Senator (*Deutsch. Medicin. Wochenschr.*, 1894, No. 20).

Leyden in opposition to Charcot, has maintained that amyotrophic lateral sclerosis is not a disease *sui generis*, that this affection is not to be differentiated from progressive bulbar paralysis, and that the spastic phenomena upon which so much stress is laid, are of secondary importance and are not to be referred to degeneration of any particular set of fibres in the white substance of the cord.

The case of Senator seems to substantiate Leyden's view. It is that of a widow fifty-seven years of age who presented the characteristic picture described by Charcot as amyotrophic, lateral sclerosis. There were paralysis of the upper and the lower extremities, contractures, stiffness, increased reflexes, ankle-clonus, marked atrophy of the hand muscles, paresis and atrophy of the tongue and lips, speech inarticulate, dysphagia, and other symptoms belonging to the disease. Psychic functions, sensibility, and the action of the sphincters were undisturbed. After a duration of five years the patient died of bronchopneumonia.

The well-hardened cord showed the following changes:

a. Marked atrophy of the ganglion cells in the anterior horns of the cervical and the dorsal segments. Hemorrhages in the cervical enlargement. Clarke's column unaffected. About this column there are round areas where the tissue has fallen out. Below the middle of the dorsal region the atrophy diminishes, and disappears entirely in the lumbar region.

b. The vessels of the entire cord are filled to excess with blood, but their walls are normal. There are also numerous recent hemorrhages both in the white and in